

Reply and Amendment:
December 28, 2007

REMARKS

Claims 25-32 and 34-50 remain in the application. In this reply, claims 25, 26, 29-31, 34, 36, and 38-42 have been amended. No new matter has been added by way of these amendments. Reconsideration and allowance of the claims in light of the amendments and arguments presented herein are respectfully requested.

Formality Rejection of the Claims

In item 2 on page 2 of the above-identified Office Action, claims 26-32 and 34-41 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

More specifically, the Office action states:

Claims 26 through 32 and 34 through 41 depend on cancelled claim 24.

The comments in the Office action have been considered and the appropriate corrections have been made to the claims.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for the purpose of satisfying formal requirements, clarification, or are made solely for cosmetic reasons to clarify the claims. The changes are neither provided for overcoming the reference nor do they narrow the scope of the claims for any reason related to the statutory requirements for a patent.

Prior Art Rejection of the Claims

In item 2 on page 2 of the Office Action, in a maintained rejection, claims 25-28, 30-32, 34-37, 39, 41-44, 47, 49, and 50 have been rejected by the Examiner under 35 U.S.C. § 102 as being anticipated by *Hsu et al.* (US 6,555,467).

In item 41 on page 6 of the Office action, in a maintained rejection, claims 42 and 45

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have been rejected by the Examiner under 35 U.S.C. § 102 as being anticipated by *Grill et al.* (US 6,413,852).

In items 47, 53, 59, 65, and 71 on pages 7-9 of the Office action, in a new rejection, claims 40, 29, 46, 48, and 38 (all dependent claims), respectively, have been rejected under 35 U.S.C. § 103 as being obvious over *Hsu et al.* in view of various secondary references.

Allowance of Claims

No recited or disclosed subject matter has been held or indicated in the Office action to be allowable subject-matter.

Reply to the Prior Art Rejection

The rejections and the comments in the Office Action have been considered. Consequently, the claims have been amended in an effort to even more clearly define the invention of the instant application.

Anticipation by *Hsu et al.*

Before discussing the applied reference *Hsu et al.* in detail, it is believed that a brief review of the recited subject-matter would be helpful.

Claim 25 (similarly claim 42) now recites, *inter alia*:

a layer being arranged on the substrate, the layer including a first subregion and a second subregion arranged proximate to the first subregion, the first subregion being a decomposable material and the second subregion having a structure of non-decomposable material;

a covering layer positioned *on* the layer including the first subregion and second subregion; and

an electrically conductive passivation layer *between* the *non-decomposable material* and the *covering layer*;

(Emphasis added.)

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More specifically, in the *Response to Arguments* on page 10 of the Office action, it has been argued that:

The applicant argues that Hsu does not teach forming the conductive passivation between adjacent surface of the nondecomposable material and the covering layer.

The applicant will note that that the conductive passivation layer (70) is between the lower horizontal surface of the covering layer and the adjacent upper *vertical* surface of the nondecomposable material (72).

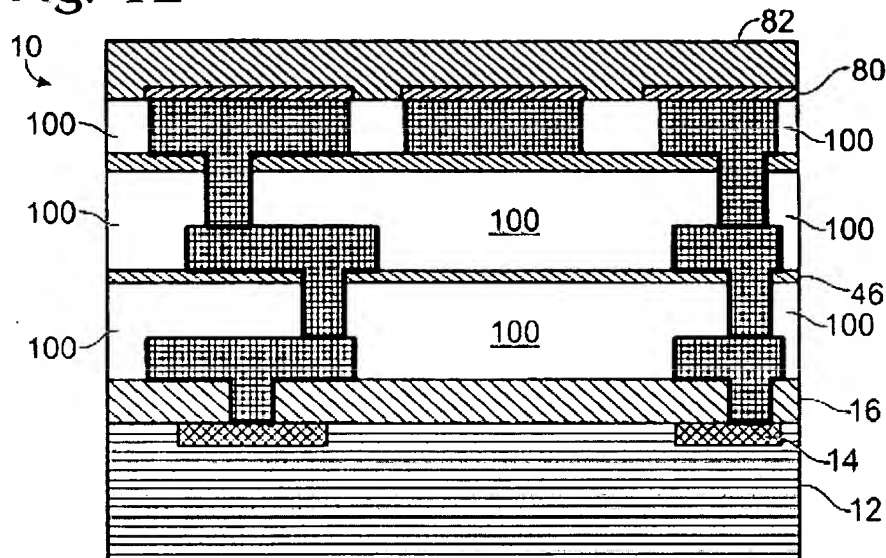
(Emphasis added.)

Claim 25 recites that the covering layer is positioned on the layer (containing decomposable material and non-decomposable material) and that the passivation layer is between the non-decomposable material and the covering layer. This makes it clear that the passivation layer, as recited in claim 25, is *on top* of the non-decomposable material (between non-decomposable material and the covering layer), and *not* on the side of the non-decomposable material, as in *Hsu et al.*, where it would be between the decomposable material and non-decomposable material.

As can be seen from FIG. 12 of *Hsu*, reproduced below, the "barrier metal" (bold black lines, not labelled in FIG. 12, see reference labels 40 and 70 in FIGS. 7 and 10 of *Hsu*) is *not* between the structure of non-decomposable material (also not labelled in FIG. 12, see reference labels 42 and 72 in FIGS. 7 and 10) and the covering layer 82.

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Fig. 12



Consequently, for at least the reasons discussed above, it is believed that claim 25 is not anticipated by *Hsu*. Independent claim 25 is, therefore, believed to be novel. Because claims 26-41 in the present application are ultimately dependent on claim 25, they are believed to be novel for at least the same reasons.

Anticipation by *Grill et al.*

Before discussing the applied reference *Grill et al.* in detail, it is believed that a brief review of the recited subject-matter would be helpful.

Claim 42 (similar to claim 25) now recites, *inter alia*:

forming a layer on a substrate, the layer including a first subregion and a second subregion arranged proximate to the first subregion, the first subregion having decomposable material and the second subregion having a structure of a non-decomposable material;

forming a covering layer on the layer including the first subregion and second subregion; and

...

wherein the decomposable material is removable from the layer arrangement by

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diffusing through the covering layer while the first subregion is *mechanically* closed off to all area outside the layer arrangement.

(Emphasis added.)

More specifically, in the *Response to Arguments* on page 10 of the Office action, it has been argued that:

Applicant's arguments filed 9/6/07 have been fully considered but they are not persuasive.

The applicant argues that Grill does not teach that the first region is mechanically closed off to the outside area.

The applicant does not claim that the first region is mechanically closed of to the outside area.

Further, the covering layer will close off the first area from particles larger than the perforations and openings therein.

(Emphasis added.)

Claim 42 has been amended to recite that the first subregion is being *mechanically* closed off to all area outside the layer arrangement.

With respect to the Examiner's observation that the "covering layer" shown in *Grill et al.* will close off the "first area" from particles larger than the perforations and openings therein, Applicant does not consider this to be the same as the covering layer as claimed. In particular, as recited in the claims, the decomposable material is removable from the layer arrangement only by *diffusing* through the covering layer and the first subregion is therefore *mechanically* closed off by the covering layer. By contrast, the embodiments of *Grill et al.* require formation of holes or perforations. After extraction of the sacrificial place-holder material (SPH), these holes or perforations are either sealed with an additional layer (col. 8, lines 40-43) or pinched-off by means of an additional dielectric deposition step (col. 3, lines 44-45). Applicant observes that a covering layer containing holes or perforations cannot be said to mechanically "close off" underlying

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areas, when, as in *Grill et al.*, a further layer or other additional steps are required specifically to close off such holes or perforations.

It is further noted that the holes or perforations of *Grill et al.* are preferably formed using reactive-ion etching through a lithographically defined masking layer (see col. 7, lines 17-22). This indicates that the holes or perforations are at least as large as the smallest feature that can be defined by such a lithographic process. This would make the holes or perforations similar in size to some other features of the multilayer interconnect structure of *Grill et al.*, and certainly large enough that a further sealing layer or pinching off step would be needed to mechanically "close off" underlying areas.

As a result of these holes, *Grill et al.* does not teach that the decomposable material is removed by diffusing through the covering layer while the first subregion is mechanically closed off. Instead, *Grill et al.* shows that the holes or perforations are used to extract the decomposable material (see col. 7, lines 17-23 and lines 36-47).

Thus, *Grill et al.* fails to teach that the decomposable material is removable from the layer structure by diffusing through the covering layer while the first subregion is mechanically closed off to all area outside the layer arrangement. Consequently, for at least the reasons discussed above, it is believed that *Grill et al.* fails to teach or suggest all the features of claim 42. Independent claim 42 is, therefore, believed to be novel. Because claims 43-50 in the present application are ultimately dependent on claim 42, they are believed to be novel as well

Rejections under 35 U.S.C. § 103(a)

Claims 40, 29, 46, 48, and 38 (all dependent claims), respectively, have been rejected under 35 U.S.C. § 103 as being obvious over *Hsu* in view of various secondary references. Since none of the cited references cure the deficiencies of *Hsu* discussed above, claims 29, 38, 40, 46, and 48 are not rendered obvious by the cited combinations for at least the same reasons.

10/518,880

Atty. Docket No. P28768 (10808/158)

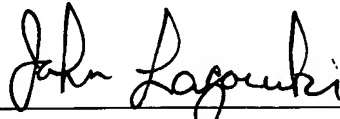
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Conclusion

Therefore, in view of the above remarks, we respectfully submit that this application is in condition for allowance and such action is earnestly requested.

If for any reason the Examiner is not able to allow the application, she is requested to contact the Applicants' undersigned attorney at (312) 321-4200.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John R. Lagowski", is written over a horizontal line.

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